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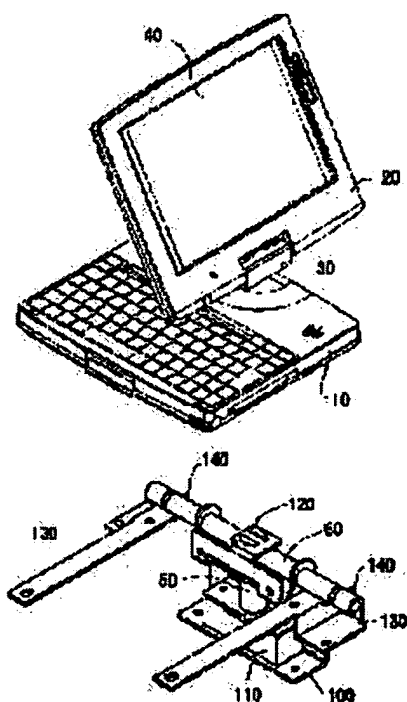
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**(54) PORTABLE INFORMATION PROCESSOR**



**(57) Abstract:**

**PROBLEM TO BE SOLVED:** To enable a display part to be arranged either faceup or facedown on a main body part which has a flat top surface by fitting the main body part to a longitudinal member, fitting a lateral member to the opposite-side end part rotatably on the shaft of the longitudinal member, and fitting the display part rotatably on the shaft of the lateral member.

**SOLUTION:** A connection part 120 is connected to the longitudinal member 50 and the vertical longitudinal member 50 and horizontal lateral member 60 are fixed. The lateral member 60 has a round rod made thin at both its ends, and display part support plates 130 are connected slidably to both its ends and arranged rotatably on the shaft of the lateral member 60. Then the display part support plates 130 have the angle of rotation restricted by angle restriction parts 140

between horizontal positions, i.e., 0° and horizontal positions, i.e., 180° where the display part support plates 130 are set upside down; and the main body part 10 is fitted to one end of the longitudinal member 50, the display part 20 is fitted to the lateral member 60 to eliminate the state wherein the display panel 40 of the display part 20 comes into contact with the installation surface, and then the display panel 40 can be inverted in either direction.

**[Claim(s)]**

**[Claim 1]** The pocket information processor which has the display attached pivotable around the shaft of the body section of a pocket information processor, the longitudinal member of the shape of a cylindrical shape attached in the direction of a normal of the

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top face of said body section, the transverse member attached in the surroundings of the shaft of said longitudinal member pivotable at the edge of a side and the opposite side in which said body section of said longitudinal member was attached, and said transverse member.

[Claim 2] The pocket information processor according to claim 1 which has the include-angle specification part which regulates surrounding angle of rotation of the shaft of said longitudinal member of said display from +180 degrees by -180 degrees when the sense of the display panel of said display is made into 0 degree at the front.

[Claim 3] The pocket information processor according to claim 1 which has the include-angle specification part which regulates angle of rotation of the shaft orientations of said transverse member of said display from 0 degree by 180 degrees when the location of facing down [ display panel / of said display ] is made into 0 degree.

[Claim 4] The pocket information processor according to claim 1 which has a pen input unit in said display.

## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to pocket information processors, such as display attachment structure and a personal computer.

[0002]

[Description of the Prior Art] Conventionally, the pocket information processor has the display which can be opened and closed to a keyboard, the body section equipped with a power unit and the circuit board inside, and the body section in the upper part.

[0003]

[Problem(s) to be Solved by the Invention] However, in the conventional pocket information processor, a display is rotatable only to the cross direction of the body section. It followed, for example, the technical problem which must rotate a body occurred to show a display to those whom a customer etc. faces.

[0004]

[Means for Solving the Problem] The pocket information processor of this invention is a pocket information processor which has the display attached pivotable around the shaft of the body section of a pocket information processor, the longitudinal member of the shape of a cylindrical shape attached in the direction of a normal of the top face of the body section, the transverse member attached to the surroundings of the shaft of a longitudinal member pivotable at the edge of a side and the opposite side in which the body section of a longitudinal member was attached, and a transverse member, in order to solve the above-mentioned technical problem.

[0005] According to the above-mentioned configuration, since the display of a pocket information processor is prepared in the surroundings of a longitudinal member rotatable, a display can be shown, without rotating a body to the customer who has met and sat down. Moreover, since the transverse member is attached in the upper part of a longitudinal member, the top face of the body section can be made into a flat surface, and a display can still also turn and fold [ also turning and folding up the screen to the top

face of the body section and ] up a field opposite to the screen.

[0006]

[Embodiment of the Invention] The example of this invention is explained based on a drawing. The pocket information processor of this example becomes the interior from the body section 10 which has the key of a data entry on a power source, CPU, memory, and the top face, the display 20 which has a display panel 40 on a front face, and the connection 30 which connects a display 20 pivotable in the direction which intersects perpendicularly to the body section 10 at a perpendicular direction and a perpendicular direction, as shown in drawing 1 . A display 20 has input coordinate location judging equipment in which pen touch is possible here.

[0007] Furthermore, in order to prevent cutting of wiring of the body section 10 and a display 20, a connection 30 regulates an angle of rotation in the range of +180 to -180 degrees, when the include angle of the transverse plane of the display panel of a display is made into 0 degree for rotation of the perpendicular direction of a display. Next, the internal structure of a connection 30 which is the rolling mechanism of this invention is shown in drawing 2 . A connection 30 is arranged at right angles to the fixed part 100 which has a hole for fixing a connection 30 to the base and tooth back of the body section 10 with a screw by both side, and a fixed part 100, and has the longitudinal member 50 of the shape of a pivotable cylindrical shape around a shaft. Furthermore, inside a fixed part 100, frictional resistance is given to a longitudinal member 50 and it has the longitudinal-member supporter 110 which has the energization section which the display 20 of drawing 1 can fix to a suitable rotation location, and the include-angle specification part which consists of a projection which specifies angle of rotation of a longitudinal member 50 at -180 degrees from +180 degrees. Rotation of a perpendicular direction is attained according to the above-mentioned device, and a display 20 can be fixed at an angle of the purpose. Moreover, it can prevent that a display rotates carelessly and wiring of the body section and a display cuts by the energization section and the include-angle specification part at the time of carrying.

[0008] Next, the horizontal rolling mechanism of a connection 30 is explained. The connection section 120 is connected to a longitudinal member 50, and the vertical longitudinal member 50 and the horizontal transverse member 60 are fixed. Here, the die length of a transverse member 60 is made into a part of display width of face of the display 20 of drawing 1 . A transverse member 60 makes the both ends of the round bar thin, the display support plate 130 is connected to both ends possible [ sliding ], and the display support plate 130 arranges the surroundings of the shaft of a transverse member 60 in a pivotable location. An angle of rotation is regulated by the horizontal position which shows the display support plate 130 to drawing 2 by the include-angle specification part 140, the horizontal position where the rear face of the include angle of 0 degree to the display support plate 130 turns up, and the include angle of 180 degrees. The display panel 40 of a display can regulate in the downward location of 0 degree, and upward location of 180 degrees by the include-angle specification part 140, applying mechanical addition [ hit / a display panel 40 / at the time of receipt / the key of the body section upper part ] is lost, and damage on a display panel 40 can be prevented. Furthermore, by specifying at 180 degrees, a display panel 40 cannot contact an installation side and can prevent damage on the tooth back of a display.

[0009] Drawing 3 is drawing showing the connection relation between the body section

10 of a connection 30, and a display 20. Drawing 3 is drawing having shown the pocket information processor of this invention from the tooth back, and in case a connection 30 opens and closes a display 20, it makes the cross section circular so that a display 20 may not be collided with. Moreover, the width of face of a connection 30 is a part of cross direction of a display of a display 20, and it forms a crevice 160 so that a connection may enter in a part of display 20. Since not both the sides of a crevice need a connection, they can perform easily wiring for sending and receiving the signal for a display and a coordinate input.

[0010] In this example, although the longitudinal member 50 was made pivotable, it is also possible to arrange the transverse member 60 which fixed the longitudinal member 50 and was connected to the longitudinal member 50 pivotable around the shaft of a longitudinal member 50. Furthermore, it fixes to the field of the back of a body with a screw 200, and the mechanical connections of the body section 10 and a connection 30 are further fixed also to the rear face of a body with a screw. Therefore, since only the center section of the body section 10 is used as a field for connection, the tooth back of a body can be used effectively and connection ports, such as an aperture for a power supply terminal and infrared ray communication, a connection of a dc-battery, and a printer, can be arranged.

[0011] Drawing 4 is drawing showing the condition at the time of receipt, and a display 20 is arranged in parallel in the upper part of the body section 10. A connection 30 is the same height as the top face and tooth back of a display 20, and does not become obstructive at the time of receipt. Finally, drawing 5 is drawing showing an example at the time of use of a pen input, and since the display 20 is turned to parallel upward with display-panel 40 \*\*\*\*, a pen input can be performed easily. Here, since the means which changes the display direction to a display panel 40 under a top was established, even if it reverses a display panel, an image and an alphabetic character can be displayed in the erection direction.

[0012]

[Effect of the Invention] The pocket information processor of this invention was made into the structure of having the display attached pivotable around the shaft of the longitudinal member of the shape of a cylindrical shape attached in the direction of a normal of the top face of the body section of a pocket information processor, and the body section, the transverse member attached in the surroundings of the shaft of a longitudinal member pivotable at the edge of a side and the opposite side in which the vertical soma was attached, and a transverse member.

[0013] Thereby, a top face does so the effectiveness which can arrange a display in any direction of a rear face and a transverse plane in the upper part of the flat body section.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the perspective view showing the pocket information processor of this invention.

[Drawing 2] It is the perspective view showing the internal structure of the connection of the pocket information processor of this invention.

[Drawing 3] It is the perspective view showing the tooth back of the pocket information processor of this invention.

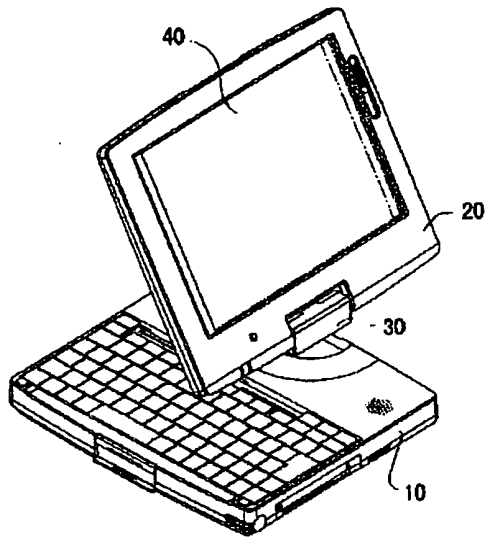
[Drawing 4] It is the perspective view showing the situation at the time of receipt of the pocket information processor of this invention.

[Drawing 5] It is the perspective view showing the condition of the use section of the pocket information processor of this invention.

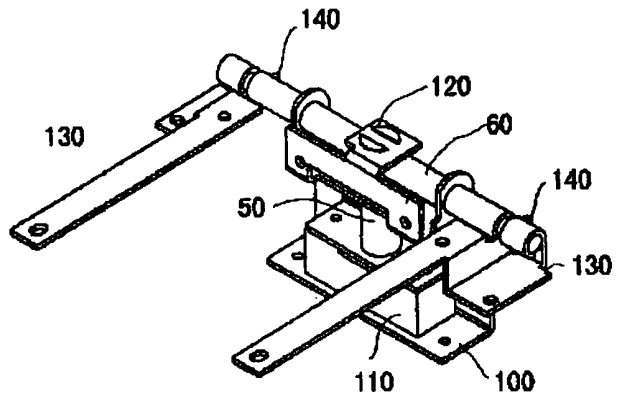
[Description of Notations]

- 10     Body Section
- 20     Display
- 30     Connection
- 40     Display Panel
- 50     Longitudinal Member
- 60     Transverse Member
- 100    Fixed Part
- 110    Longitudinal-Member Supporter
- 120    Connection Section
- 130    Display Support Plate
- 140    Include-Angle Specification Part
- 160    Crevice
- 200    Screw

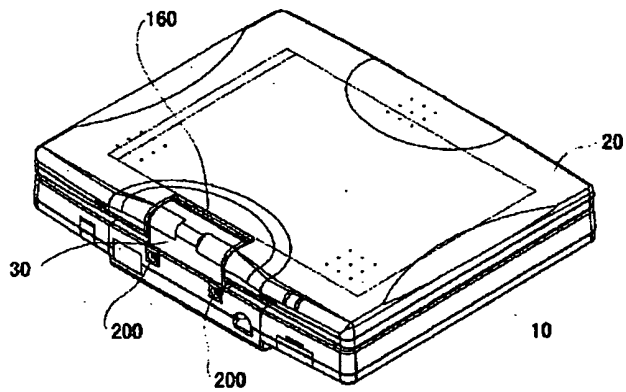
(Drawing 1)



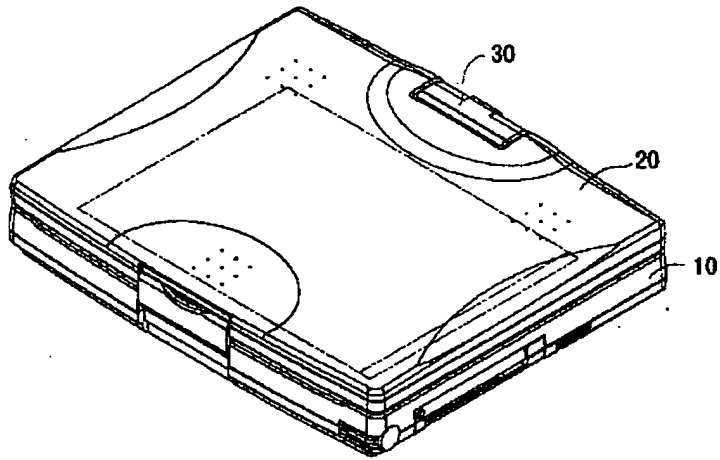
(Drawing 2)



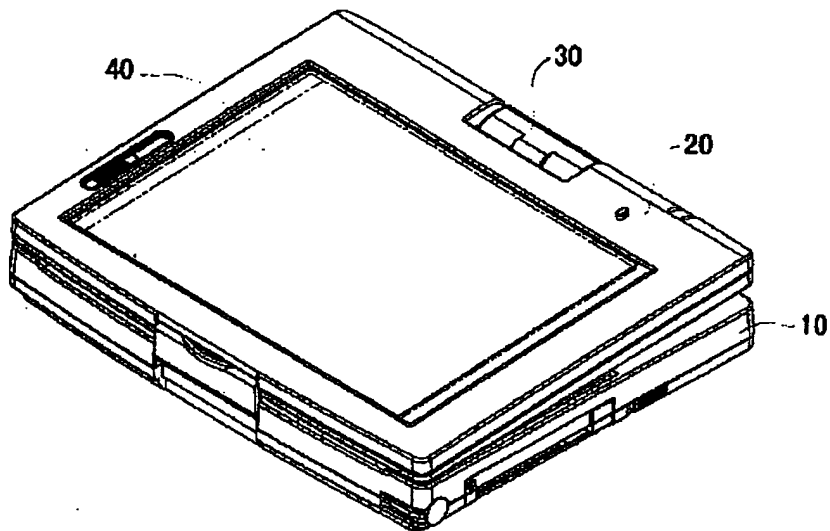
(Drawing 3)



(Drawing 4)



(Drawing 5)



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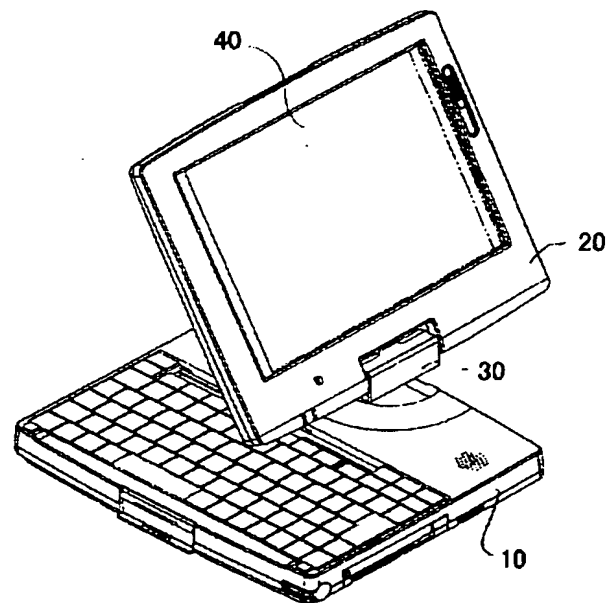
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(54) 【発明の名称】 携帯型情報処理装置

(57) 【要約】

【課題】 対面配座した顧客に、表示部を見やすく配置した携帯情報処理装置の提供。

【解決手段】 携帯情報処理装置の本体部10と、本体部の上面の法線方向に取り付けられた円柱形状の縦部材と縦部材の本体部が取り付けられた側と反対側の端部に縦部材の軸の周りに回転可能に付けられた横部材とからなる接続部30と、横部材の軸の周りに回転可能に取り付けられた表示部20を設ける。



## 【特許請求の範囲】

【請求項1】 携帯情報処理装置の本体部と、前記本体部の上面の法線方向に取り付けられた円柱形状の縦部材と、前記縦部材の前記本体部に取り付けられた側と反対側の端部に前記縦部材の軸の周りに回転可能に取り付けられた横部材と、前記横部材の軸の周りに回転可能に取り付けられた表示部を有する携帯情報処理装置。

【請求項2】 前記表示部の前記縦部材の軸の周りの回転角度を前記表示部の表示パネルの向きを正面で $0^{\circ}$ としたときに、 $+180^{\circ}$ から $-180^{\circ}$ までに規制する角度規制部を有する請求項1記載の携帯情報処理装置。

【請求項3】 前記表示部の前記横部材の軸方向の回転角度を前記表示部の表示パネルが下向きの位置を $0^{\circ}$ としたときに $0^{\circ}$ から $180^{\circ}$ までに規制する角度規制部を有する請求項1記載の携帯情報処理装置。

【請求項4】 前記表示部にペン入力装置を有する請求項1記載の携帯情報処理装置。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、表示部取付構造とパーソナルコンピュータなどの携帯情報処理装置に関するものである。

## 【0002】

【従来の技術】従来、携帯情報処理装置は、上部にキーボードと内部に電源装置及び回路基板を備えた本体部と、本体部に対して開閉可能な表示部とを有している。

## 【0003】

【発明が解決しようとする課題】しかしながら、従来の携帯情報処理装置では、表示部は本体部の幅方向に対してのみ回転可能となっている。したがって、例えば、表示部を顧客など向かい合う人に見せたい場合、本体を回転しなければならぬ課題があった。

## 【0004】

【課題を解決するための手段】本発明の携帯情報処理装置は、上記の課題を解決するために、携帯情報処理装置の本体部と、本体部の上面の法線方向に取り付けられた円柱形状の縦部材と、縦部材の本体部に取り付けられた側と反対側の端部に縦部材の軸の周りに回転可能に付けられた横部材と、横部材の軸の周りに回転可能に取り付けられた表示部を有する携帯情報処理装置である。

【0005】上記の構成によれば、携帯情報処理装置の表示部が縦部材の回りに回転可能に設けられているので、対面して着座している顧客に対し本体を回転することなく表示を示すことができる。また、横部材が縦部材の上部に取り付けられているため、本体部の上面は平面とすることができ、さらに表示部は本体部の上面に対し表示面を向けて折りたたむことも、表示面と反対の面を向けて折りたたむことも可能である。

## 【0006】

【発明の実施の形態】本発明の実施例を図面に基づき説

明する。本実施例の携帯情報処理装置は、図1に示すように、内部に電源、CPU、メモリ、そして上面にデータ入力用のキーを有する本体部10と、表面に表示パネル40を有する表示部20と、表示部20を本体部10に対して垂直方向と垂直方向に直交する方向に回転可能に接続する接続部30からなる。ここで表示部20は、ペンタッチ可能な入力座標位置判定装置を有する。

【0007】さらに、接続部30は本体部10と表示部20の配線の切断を防止するために、表示部の垂直方向の回転を表示部の表示パネルの正面の角度を $0^{\circ}$ としたときに、 $+180^{\circ}$ から $-180^{\circ}$ の範囲に、回転角を規制する。次に図2に本発明の回転機構である、接続部30の内部構造を示す。接続部30は、本体部10の底面と背面に接続部30をネジにより固定するための穴を両脇に有する固定部100と、固定部100に垂直に配置され軸の周りに回転可能な円柱形状の縦部材50とを有する。さらに固定部100の内部には、縦部材50に摩擦抵抗を与え、図1の表示部20が適当な回転位置に固定できる付勢部と、縦部材50の回転角度を $+180^{\circ}$ から $-180^{\circ}$ に規定する突起からなる角度規制部を有する縦部材支持部110を有する。上記機構により垂直方向の回転が可能となり、目的の角度で表示部20を固定することができる。また、付勢部と角度規制部により、携帯時に不用意に表示部が回転し、本体部と表示部の配線が切断することを防止することができる。

【0008】次に、接続部30の水平方向の回転機構について説明する。縦部材50には連結部120が接続され、垂直方向の縦部材50と水平方向の横部材60を固定する。ここで、横部材60の長さは、図1の表示部20の表示幅の一部とする。横部材60は、丸棒の両端を細くして、両端に表示部支持板130を摺動可能に接続し、表示部支持板130が横部材60の軸の周りを回転可能な位置に配置する。表示部支持板130は、角度規制部140により図2に示す水平位置、角度 $0^{\circ}$ から表示部支持板130の裏面が上になる水平位置、角度 $180^{\circ}$ までに回転角が規制される。角度規制部140により表示部の表示パネル40が下向きの位置 $0^{\circ}$ と上向きの位置 $180^{\circ}$ に規制することができ、収納時に表示パネル40に本体部上部のキーが当たるなどの、機械的付加をかける事がなくなり、表示パネル40の損傷を防止することができる。さらに、 $180^{\circ}$ で規定する事により、表示パネル40が設置面に接触することがなく、表示部の背面の損傷を防止する事が出来る。

【0009】図3は、接続部30の本体部10と表示部20との接続関係を示す図である。図3は、本発明の携帯情報処理装置を背面から示した図であり、接続部30は表示部20を開閉する際に、表示部20にぶつからないように、断面を円形としている。また、接続部30の幅は、表示部20の表示の幅方向の一部であり、表示部20の一部を接続部が入るように、凹部160を設け

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る。凹部の両脇は接続部を必要としないため、表示及び座標入力のための信号を送受するための配線を容易に行う事が出来る。

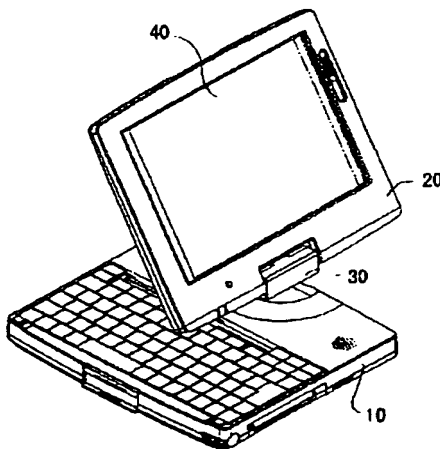
【0010】本実施例においては、縦部材50を回転可能としたが、縦部材50を固定し、縦部材50に接続された横部材60を縦部材50の軸の周りに回転可能に配置することも可能である。さらに、本体部10と接続部30の機械的接続は、本体後方の面にネジ200で固定し、さらに本体の裏面にもネジで固定する。したがって、本体部10の中央部のみ接続のための領域として使用するため、本体の背面を有効に使用することができ、電源端子、赤外線通信のための窓、バッテリーの接続部、プリンター等の接続ポートを配置する事が出来る。

【0011】図4は、収納時の状態を示す図で、本体部10の上部に表示部20が平行に配置される。接続部30は表示部20の上面や背面と同一の高さであり、収納時に邪魔にならない。最後に、図5は、ペン入力の使用時の一例を示す図で、表示部20は表示パネル40置面と平行に上向きにしているので、容易にペン入力ができる。ここで、表示パネル40への表示方向を上下切り替える手段を設けたため、表示パネルを反転しても正立方向に画像や文字を表示することができる。

【0012】

【発明の効果】本発明の携帯情報処理装置は、携帯情報処理装置の本体部と、本体部の上面の法線方向に取り付けられた円柱形状の縦部材と、縦部材が取り付けられた側と反対側の端部に縦部材の軸の周りに回転可能に取り付けられた横部材と、横部材の軸の周りに回転可能に取り付けられた表示部を有する構造とした。

【図1】



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【0013】これにより、上面が平坦な本体部の上部に、裏面と正面のいずれの方向でも表示部を配置することができる効果を奏する。

【図面の簡単な説明】

【図1】 本発明の携帯情報処理装置を示す斜視図である。

【図2】 本発明の携帯情報処理装置の接続部の内部構造を示す斜視図である。

【図3】 本発明の携帯情報処理装置の背面を示す斜視図である。

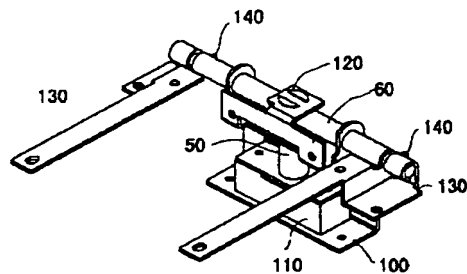
【図4】 本発明の携帯情報処理装置の収納時の状態を示す斜視図である。

【図5】 本発明の携帯情報処理装置の使用部の状態を示す斜視図である。

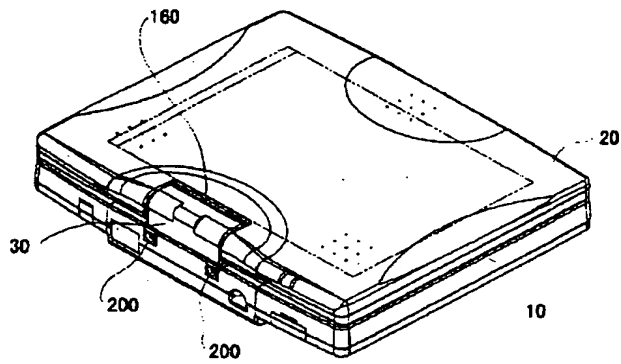
【符号の説明】

- |     |        |
|-----|--------|
| 10  | 本体部    |
| 20  | 表示部    |
| 30  | 接続部    |
| 40  | 表示パネル  |
| 50  | 縦部材    |
| 60  | 横部材    |
| 100 | 固定部    |
| 110 | 縦部材支持部 |
| 120 | 連結部    |
| 130 | 表示部支持板 |
| 140 | 角度規制部  |
| 160 | 凹部     |
| 200 | ネジ     |

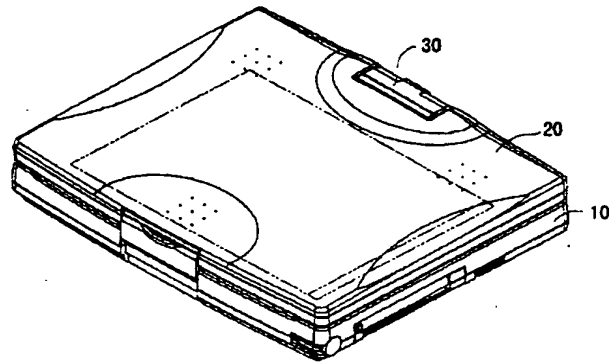
【図2】



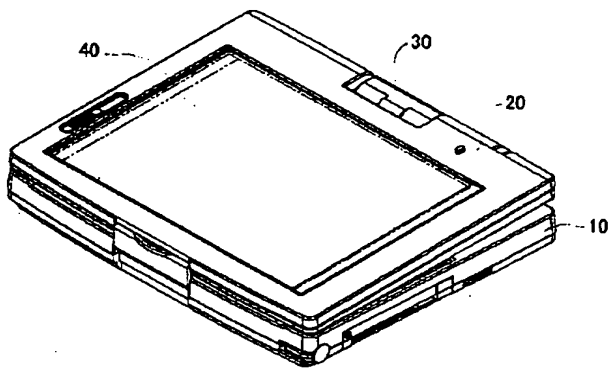
【図3】



【図4】



【図5】



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